SLOVENSKI STANDARD
SIST EN 12848:2003

01-januar-2003

Bitumen in bitumenska veziva - Določ evanje stopnje stabilnosti bitumenskih emulzij s cementom

Bitumen and bituminous binders - Determination of mixing stability with cement of bitumen emulsions

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Mischstabilität von Bitumenemulsionen mit Zement

Bitumes et liants bitumineux - Détermination de la stabilité des émulsions de bitume en mélange avec du ciment

Ta slovenski standard je istoveten z: **EN 12848:2002**

ICS:

75.140	Voski, bitumni in drugi naftni proizvodi	Waxes, bituminous materials and other petroleum products
91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

SIST EN 12848:2003 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12848

May 2002

ICS 75.140; 91.100.50

English version

Bitumen and bituminous binders - Determination of mixing stability with cement of bitumen emulsions

Bitumes et liants bitumineux - Détermination de la stabilité des émulsions de bitume en mélange avec du ciment

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Mischstabilität von Bitumenemulsionen mit Zement

This European Standard was approved by CEN on 15 February 2002.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN 12848:2002 E

Foreword

This document EN 12848:2002 has been prepared by Technical Committee CEN/TC 336 "Bituminous binders", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2002, and conflicting national standards shall be withdrawn at the latest by November 2002.

This European Standard is part of a package including 14 standards: EN 1428, EN 1429, EN 1430, EN 1431, EN 12846, EN 12847, EN 12848, EN 12849, EN 12850, EN 13074, EN 13075-1, EN 13075-2, EN 13614 and EN 13808.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies a method for the determination of mixing stability of bitumen emulsions with cement. It applies to overstabilized cationic bitumen emulsions and to slow-setting and overstabilized anionic bitumen emulsions.

WARNING – The use of this standard can involve hazardous materials, operations and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. The normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 58[1)], *Bitumen and bituminous binders - Sampling bituminous binders.*

EN 12594, *Bitumen and bituminous binders - Preparation of test samples.*

EN 197-1, *Cement - Part 1: Composition, specifications and conformity criteria for common cements.*

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987).*

3 Terms and definitions

For the purposes of this European Standard, the following term and definition apply.

3.1
mixing stability with cement
mass of coagulated material (bitumen + cement) which is produced when a bitumen emulsion is mixed with cement under the test conditions defined in this method

4 Principle

The bitumen emulsion is mixed with cement under specified conditions. The mixture is then poured through a sieve and the amount of material retained on the sieve is weighed.

5 Reagents and materials

Use only reagents of recognised analytical grade and water conforming to grade 3 of EN ISO 3696.

For the cement, use a Portland cement CPA-CEMI, conforming to EN 197-1 CEMI 32.5.

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1) In course of revision.

6 Apparatus

Usual laboratory apparatus and glassware, together with the following:

6.1 Sieve, stainless steel or brass, with a nominal frame diameter from 75 mm to 150 mm and a mesh size of 2,0 mm.

6.2 Sieve, stainless steel or brass, with a nominal frame diameter from 75 mm to 150 mm and a mesh size of 0,16 mm.

6.3 Sieve pans, to fit 75 mm to 150 mm diameter sieves.

6.4 Round bottomed dish, glass or stainless steel, 500 ml capacity.

6.5 Graduated cylinder, 250 ml capacity.

6.6 Balance, capable of weighing 500 g, with an accuracy of ± 0,1 g.

6.7 Glass stirring rod or steel rod, nominally 5 mm in diameter, with rounded ends.

6.8 Oven, thermostatically controlled to 110 °C ± 5 °C.

7 Sampling

The material under test shall be sampled in accordance with EN 58 and prepared in accordance with EN 12594.

8 Procedure

8.1 General

Carry out the procedure under normal laboratory conditions.

NOTE "Normal laboratory conditions" mean that the range of temperature is 18 °C to 28 °C.

8.2 Sieving of cement

Pass the cement (article 5) through the dry 0,16 mm mesh sieve (6.2) and retain the material passing for the test (see 8.3).

8.3 Test

Wash the 2 mm mesh sieve (6.1) and pan (6.3) and dry them in the oven (6.8) for 30 min. Cool in a dessiccator and weigh the sieve and pan together (m_1).

Weigh 50,0 g ± 0,1 g of cement, into the round bottomed dish (6.4). Add 100 ml of the emulsion test sample and stir immediately for 1 min in a circular motion at the rate of one turn per second. Add 150 ml of water and stir for a further 3 min at the same rate.

Pour the mixture through the 2 mm mesh sieve (6.1), ensuring that all of the mixture is removed from the round bottomed dish by repeatedly washing with water. When all of the mixture has been transferred from the round bottomed dish, rinse the sieve with further water by pouring this from a height of 150 mm ± 5 mm until the washings are clear.

Fit the sieve onto the pan and dry them in the oven (6.8) for 1 h. Cool in a dessiccator and reweigh. Repeat this procedure until the mass (m_2) is constant (less than 0,1 g difference between weighings).

9 Calculation

Calculate the mixing stability with cement, *Sc*, of the test sample, in grams, by means of the following equation:

$$Sc = m_2 - m_1$$

where

m_1 is the mass of the sieve and pan, in grams;

m_2 is the mass of the sieve and pan after drying, in grams.

10 Expression of results

Express the result, obtained in accordance with clause 9, in grams, rounded to the nearest 0,1 g.

11 Precision

NOTE 1 The precision of the method was evaluated in accordance with EN ISO 4259 [1].

NOTE 2 The precision data are extracted from NF T 66-024 [2].

11.1 Repeatability

The difference between two successive test results, obtained by the same operator with the same apparatus under constant operating conditions on identical test material would, in the long run, in the normal and correct operation of the test method, exceed 0,2 g in only one case in twenty.

11.2 Reproducibility

The difference between two single and independent results obtained by different operators working in different laboratories on identical test material would, in the long run, in the normal and correct operation of the test method, exceed 0,4 g in only one case in twenty.

12 Test report

The test report shall contain at least the following information:

a) the type and complete identification of the sample under test;

b) a reference to this European Standard;

c) the result of the test (see clause 10);

d) any deviation, by agreement or otherwise, from the procedure specified;

e) the date of sampling, the date of sample preparation and the date of the test.

Bibliography

[1] EN ISO 4259, *Petroleum products - Determination and application of precision data in relation to methods of test (ISO 4259:1992/Cor 1:1993).*

[2] NF T 66-024:1984, *Emulsions de bitume – Essai de stabilité au ciment (Bitumen emulsions – Test of stability with cement).*